Exhibit 13

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF WEST VIRGINIA

JONATHAN R., *et al.*,	)	
	)	
Plaintiffs,	)	
v.	)	
	)	
JIM JUSTICE, in his official capacity as	)	**Case No.** 3:19-cv-00710
Governor of West Virginia, *et al.*,	)	
	)	
Defendants.	)	

DECLARATION OF DR. ALAN SALZBERG

1.   I, Dr. Alan Salzberg, have been retained by the Defendants as a statistical expert. I was asked to evaluate the data related to the "Plaintiffs' Memorandum of Law in Support of Motion for Class Certification" in the above-referenced matter.

2.   The attached expert report contains my opinions and analysis, describes the data I used to form my opinions, and notes my qualifications. I also include the statistical program files that I created in order to perform my analysis, and the program logs that were produced when I ran those programs.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this ___13____ day of November 2020, in Brooklyn__, New York.

Alan J Salzberg

Alan Salzberg

Statistical Review of West Virginia Foster Care Data Regarding the matter of *Jonathan R., minor, by Next Friend, Sarah DIXON, et al., v. Jim JUSTICE, et al.*

Prepared By

Alan J. Salzberg, Ph.D.

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I.   Introduction

My name is Alan Salzberg. I am the Principal of Salt Hill Statistical Consulting, and I received a Ph.D. in Statistics from the University of Pennsylvania. I was asked to evaluate the data with respect to the "Plaintiffs' Memorandum of Law in Support of Motion for Class Certification" ("Plaintiffs' Memorandum of Law") in the matter *Jonathan R., minor, by Next Friend, Sarah DIXON, et al., v. Jim JUSTICE, et al.*

My report proceeds as follows. In the next section, I summarize my opinions. In Section III, I review my qualifications. In Section IV, I describe the data I used to perform my analysis and form my conclusions. In Section V, I detail my analysis and the reasons for my findings. Appendix I contains supplemental tables tabulating information regarding children in care. Appendix II contains statistical program files that I created in order to perform my analysis, along with the program logs that were produced when I ran those programs. Appendix III contains my resume, publications for the last 10 years, billing rate, and testimony history for the last four years. The materials I relied on are cited in the text of the report or included in the appendices.

II.   Summary of Opinions

In summary, I find that:

a) The nine named plaintiffs do not comprise a statistical sample, and therefore cannot be assumed to be representative of the class or subclasses.
b) The nine named plaintiffs differ substantially from the proposed class with respect to their background prior to foster care and with respect to their experiences in foster care.
c) I reviewed West Virginia's foster care data over the last five years and found the following:
    1. The number of children in care increased.
    2. The percentage of children in group homes has declined.
    3. The percentage of children placed with families has increased.
    4. The percentage of children placed out of state has not changed substantially.
    5. The number of placements per episode of care has declined or remained the same.

I describe the analyses that led to these findings in Section V.

III.   Qualifications

I am the Principal of Salt Hill Statistical Consulting. My work includes statistical sampling, analysis, and review for government and industry. On several occasions, I have written expert statistical reports or testified as a statistical expert, both in court and in depositions. My projects have included:

•   Statistical analysis and evaluation of foster care data in the State of Texas. Testified in Federal Court as an expert in Statistics in a matter brought against the State of Texas regarding foster care.

•   Statistical review of the sampling and estimation methodology used to audit Medicaid

providers in New York State. Work was performed on behalf of the New York State Office of Medicaid Inspector General.

- On behalf of several state public service commissions, directed data analysis and statistical design in a series of tests of Bell South, Verizon, SBC-Ameritech, and Qwest. Testified before several state public service commissions, including New York, Virginia, Florida, Michigan, and Colorado. Co-inventor of U.S. Patent related to this work.

- Statistical sampling and analysis, including regression modeling and survival analysis, on behalf of the U.S. Department of Labor.

I received a Ph.D. in Statistics from the University of Pennsylvania, where I also received a B.S. in Economics. I have taught courses in statistics and quantitative methods at the University of Pennsylvania and American University and have published a number of statistics papers in peer-reviewed journals. I am also the co-inventor on a U.S. Patent (#6,636,585) for a statistical process design to test the systems of telecommunications companies. A copy of my resume is attached as Appendix III to this Report, which also includes all publications within the last ten years and a list of testimony within the last four years.

IV. Background and Data

Plaintiffs' Memorandum of Law describes nine children and their experiences in the West Virginia foster care system. I understand that these children are supposed to be representative of the approximately 7,000 children in foster care in West Virginia.[1]

In order to further examine data involving the children in foster care in West Virginia and in order to compare the named plaintiff children to the class as a whole, I obtained biannual data from West Virginia's Adoption and Foster Care Analysis and Reporting System (AFCARS) from September 2015 through March 2020. In total, I received 10 files containing "raw" AFCARS data, and each file contained a single line with information about each child in care at any time in the six-month period since the last report. I also received 13 biannual files, dating back to March 2013, containing summaries of the AFCARS data. For my analysis below, I used the raw AFCARS files. I obtained the record identifier for the nine children ("named plaintiffs") discussed in the Plaintiffs' Memorandum of Law. This allowed me to identify the lines in the raw data associated with the named plaintiffs. Using that information, I was able to make comparisons between the background and experience of the named plaintiffs to that of all children in care.

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[1] The number of children in care varies, but the Plaintiffs' Memorandum of Law states that the "General Class consists of approximately 6,970 children currently in the custody of DHHR" (p. 15-16).

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V.   Details of Findings

a) The nine named plaintiffs do not comprise a statistical sample, and therefore cannot be assumed to be representative of the class or subclasses.

The plaintiffs present information regarding nine children as representative of the class of about 7,000 children.[2] These nine children were not chosen by a statistical sampling process and therefore cannot be assumed to be representative of the 7,000 children in the general class. Instead the sample is a "convenience" sample.[3] Such a sample, obtained by means other than statistical selection, can contain unknown and indeterminate biases, and therefore is not useful in making extrapolations about the underlying population.[4] Therefore, the reviews performed by the plaintiff's experts regarding these nine children, even if they contain no errors, are only useful in making inferences about the nine children reviewed, and say nothing about the other 7,000 children in care.[5]

Even had the nine children been selected at random from the class of approximately 7,000 children, inferences regarding the population of children in care would come only with a high and generally unacceptable margin of error. For example, suppose that a statistically valid sample found that 4 of the 9 children were below the age of 5.[6] That result, if from a statistically valid sample, would only imply, with 95% confidence, that somewhere between 14% and 79% of the children in care are below the age of 5.[7] More generally, the margin of error for any inference on a statistically valid sample of only 9 is as high as about plus or minus 30%. Because the sample of 9 children is not a statistically valid sample, it may also contain additional, and unknown, biases and errors.

In addition to reviewing information regarding the nine named plaintiffs, I understand that the plaintiffs also used the 2017 West Virginia Child and Family Services Review (CSFR) to draw some conclusions. I was asked to comment on whether the 2017 CFSR review, which includes a total of 40 children who were in foster care, could be used to make inferences regarding either or both of two subpopulations at issue in this matter. Those subpopulations are: 1) children aged 14 and over, and 2) children with disabilities.

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[2] See page 15 of Plaintiffs' Memorandum of Law, which states that "the General Class consists of approximately 6,970 children…"

[3] See, for example, Freedman, David; Pisani, Robert; and Purves, Roger, Statistics, W.W. Norton and Company 1980, p. 366, which states: "A sample of convenience is a sample that isn't chosen by a probability method."

[4] See, for example, Freedman, David; Pisani, Robert; and Purves, Roger, Statistics, W.W. Norton and Company 1980, p. 366.

[5] Plaintiffs' Memorandum of Law, p. 4-5, refers to the Plaintiffs' expert witnesses conclusions, and follows with a summary of facts regarding each child, on pages 6-12.

[6] For the purpose of this example, the hypothetical statistically valid sample is a random sample where each child has the same chance of being selected.

[7] This interval can be determined using the command "cii proportion 9 4" in the software package Stata, or can be determined using the Binomial probability distribution and any statistical software program.

From a statistical perspective, it is inappropriate to make inferences regarding these subpopulations from the 2017 CFSR review of 40 children in foster care. In particular, only a review of a random sample of children in each subpopulation could be used to make inferences regarding that subpopulation.   If the 40 cases were selected at random, and it is possible to identify particular cases among the 40 that also belong in one of the two subpopulations, then inferences could be made using those particular cases about each subpopulation, with the caveat that such a sample is likely to be quite small and would have a substantial margin of error.[8]   If the sample of 40 foster care cases does not include cases from one or both of the sub-populations, then no inferences can be made about the subpopulations that are not included. My review of the CFSR Report indicates that the results are not broken out by age or whether the child had a disability, and therefore, these results should not be applied to the subpopulations.

b) *The nine named plaintiffs differ substantially from the proposed class with respect to their background prior to foster care and with respect to their experiences in foster care.*

As the nine named plaintiffs were not statistically selected, it is not surprising that the named plaintiffs and their experiences are very different than the other children in the class.

I used the AFCARS raw data from March 2020 to compare the named plaintiffs to all children in care. As I explained above, the March 2020 AFCARS raw data contains information about each child in care at any time from the prior AFCARS raw data set (which was in September 2019) through the time the March 2020 raw data set was created. This means that some of the children in the March 2020 AFCARS raw data set, including two of the named plaintiffs, were no longer in care as of March 2020 (but were in care at some point between September 2019 through March 2020).

Using the March 2020 AFCARS raw data, I found that, as of March 2020, all of the named plaintiffs were at least 7 years-old, and that 8 out of 9 of them were 11 years-old or older.[9] In contrast, as of March 2020, 43% of children in care were younger than age 7 and 62% of

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[8] Methods for estimation regarding a subpopulation are discussed in, for instance, Thompson, Steven K. Sampling, Wiley, 1992, p. 41-44. The introduction to the CFSR report indicates there was at least some review of cases regarding children aged 12-17, but does not detail which cases or how many. In particular, the 2017 CFSR Report states that: "The Safe at Home project focuses on children age 12–17 and uses a wraparound approach, providing intensive in-home services with the goal of maintaining children in their home, or in communities in family-like settings if placement is necessary. This demonstration project has proven instrumental in positively affecting the permanency and well-being of youth participating in the program, as evidenced through the case record reviews and stakeholder interviews."

[9] My program and analysis, which show the comparisons between the named plaintiff children and children in care overall, are done using the March 2020 AFCARS raw data. My program log, provided as an appendix, shows the details of my analysis.

children in care were younger than age 11.[10] In other words, the named plaintiff children are considerably older than the proposed class they are meant to represent.

Eight (89%) of the 9 named plaintiffs were clinically diagnosed with a disability, while only 16% of children in care have been so diagnosed.[11] In other words, the named plaintiff children are much more likely to have been diagnosed with a disability than the proposed class overall.

Two (22%) of the 9 named plaintiffs have "significantly subaverage" cognitive and motor functioning, while less than 1% of the children in care have these deficits.[12] Thus, the named plaintiffs have these cognitive and motor functioning deficits at a much higher rate than do the proposed class overall.

Six (67%) of the 9 named plaintiffs are categorized as emotionally disturbed. In contrast, only 12% of children in care carry such a designation. In other words, the named plaintiffs are not representative of the proposed class in terms of the percentage that are emotionally disturbed.

Four (44%) of the 9 named plaintiffs were placed out of state, while only 6% of current placements at that time were out of state.[13] In other words, the named plaintiffs have out-of-state placements at a much higher rate than does the proposed class overall.

Six (67%) of the 9 named plaintiffs were in a group home, and only 2 (22%) of the nine are in a foster family home (non-relative), during the time period covered by the March 2020 AFCARS raw data.[14] In contrast, only 12% of children in care in West Virginia are in a group home, while 60% are in a foster family home (non-relative). In other words, the named plaintiffs are not representative of the proposed class in terms of their current placement setting.

The named plaintiffs have all been in multiple placements in their most recent time in care. The named plaintiffs have been in an average and median of 8 placements in their most recent time in care. Furthermore, all nine named plaintiffs have had more than 3 placements in their most recent time in care. This is in sharp contrast to the most recent data for all children in care, from March 2020. This data shows that the median number of placements in the most recent time in care was one (meaning that at least 50% of children have been in the same placement their entire current time in care), and the average number of placements for these children was 2. Furthermore, 87 percent of the children in care have been in 3 or fewer placements in their

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[10] March 2020 AFCARS data.

[11] That determination has not yet been made for another 19%. Even if all those for whom the determination had not been made were to have a disability, the rate would be 35% in the foster care population at large, far smaller than the 89% among the named plaintiffs.

[12] March 2020 AFCARS data.

[13] March 2020 AFCARS data. This analysis considers the current placement for any child in care and the most recent placement for children that are no longer in care but were in care at some point in the most recent time period.

[14] This analysis considers the current placement for any child in care and the most recent placement for children that are no longer in care but were in care at some point in the most recent time period.

current time in care. In other words, the named plaintiffs have been in far more placements than the vast majority of the proposed class they are meant to represent.

The named plaintiffs most recent episode of care has lasted longer than most foster care children. Only 2 (22%) of the 9 children entered their most recent care episode in the last three years. In contrast, as of March 2020, 94% of all children in care entered care within the last three years.[15] In other words, the named plaintiff children have been in their current care episode far longer than the class they are meant to represent.

The named plaintiffs were first placed into care earlier than most in the foster care population. Only 2 (22%) of the 9 children first entered care within the last three years. In contrast, as of March 2020, 86% of children first entered care within the last three years.[16] In other words, the named plaintiff children were first put into care much earlier than the class they are meant to represent.

The most recent plan goal is to reunify with parents or caretakers for 2 (22%) of the nine named plaintiffs, but this is the goal for more than half (57%) of the children in care. The most recent plan goal is adoption for 6 (67%) of the named plaintiffs but this is the goal for only 32% of the children in care. Finally, the most recent plan goal is emancipation for one (11%) of the 9 named plaintiffs, but this is the stated goal for only 1% of the children in care. In other words, the most recent plan goals differ substantially between the named plaintiffs and the proposed class they are meant to represent.

Overall, as described above, the situation and experiences of the nine named plaintiffs were far different than the typical children in care, and therefore the nine named plaintiffs are not at all representative of the proposed class.

c) *Profile of Care over Time*

I was asked to review how the number of placement settings, number of placements, and number of placements out of state changed over time. In order to analyze this data, I grouped the AFCARS raw data files by year. For 2015, I only had the September data, and for 2020, I only had March data. For each of the years 2016 through 2019, I had both March and September data.

Overall, the number of children in care has increased substantially since 2015. When the September 2015 data was pulled, there were 4,966 children in care, and there had been a total of 6,811 in care since the last reporting period.[17] By the March 2020 data pull, AFCARS indicated

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[15] March 2020 AFCARS data.

[16] March 2020 AFCARS data.

[17] The difference between these numbers constitutes the children that were in care at some point in the reporting period but left care by the end of the period.

that 7,690 children were in care and 10,016 had been in care at some point since the last reporting period. The table below summarizes the number of children in care over time.

Table 1: Number of Children in Care over Time[18]

Report Date	Number In Care When Raw Data was Pulled	Number in Care During Period
September 2015	4,966	6,811
March 2016	5,295	6,995
September 2016	5,751	7,645
March 2017	6,234	8,055
September 2017	6,784	8,831
March 2018	6,968	9,233
September 2018	7,279	9,545
March 2019	7,350	9,707
September 2019	7,388	9,948
March 2020	7,690	10,016

The profile of placement settings has changed over time. In particular, the percentage in group homes dropped, and the percentage of children placed with a foster family increased. The increase in placement with foster families was true both overall, and when limiting the analysis to those with a non-relative foster family. I found that these changes over time were statistically significant, meaning they were too large to be explained by random fluctuations in the population of children in care. The table below shows the breakdown of the current placement setting of children in care, by year.

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[18] As explained above, the data includes any child in care at any time in the 6-month period for the raw data pull. Thus, for instance, the March 2020 data includes all children in care at any time after the September 2019 data pull through March 2020.

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Table 2: Placement Settings by Year[19]

Placement Setting	Year					
	2015	2016	2017	2018	2019	2020
Pre-Adoptive Home	6%	7%	6%	7%	7%	1%
Foster Family Home (Relative)	17%	17%	19%	19%	18%	17%
Foster Family Home (Non-Relative)	45%	47%	49%	49%	53%	60%
Group Home	20%	18%	15%	14%	13%	13%
Institution	3%	4%	4%	3%	3%	3%
Supervised Independent Living	1%	1%	0%	0%	0%	0%
Runaway	1%	1%	1%	1%	1%	1%
Trial Home Visit	7%	7%	6%	6%	5%	5%

I was also asked to consider the placement settings for children aged 12 to 17. The table below shows that breakdown.

Table 3: Placement Settings by Year, Children 12 to 17 years Old

Placement Setting	Year					
	2015	2016	2017	2018	2019	2020
Pre-Adoptive Home	2%	2%	2%	4%	4%	1%
Foster Family Home (Relative)	10%	10%	13%	14%	14%	13%
Foster Family Home (Non-Relative)	23%	26%	27%	28%	31%	36%
Group Home	49%	45%	41%	39%	37%	35%
Institution	7%	8%	9%	8%	8%	9%
Supervised Independent Living	0%	0%	0%	0%	0%	0%
Runaway	1%	2%	2%	2%	1%	1%
Trial Home Visit	8%	7%	6%	5%	5%	5%

I also reviewed the percentage of children who were placed out of state. That percentage has fluctuated some, but remains around 6%, and I did not find that there was a statistically significant change in that percentage. The table below shows that percentage by year.

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[19] The year specified is the year of the raw data. As explained before, each set of raw data contains information about all children in care at any time in the 6-month period prior to the data pull. Most years include two sets of raw data, one pulled in March and one pulled in September. The exceptions are 2015 and 2020. The 2015 data only incudes September raw data and the 2020 data only includes March raw data.

Table 4: Percentage Placed Out of State

Year	Percentage Placed Out of State
2015	6.4%
2016	5.3%
2017	6.3%
2018	6.5%
2019	6.1%
2020	6.2%

I reviewed the number of placements for each episode of care in the foster system. Throughout the period from 2015 through 2020, the median number of placements was one, meaning that at least half of children were only placed once during their time in care. The average was around 2 placements, meaning a minority of children were placed multiple times. However, that average has declined some over time, and that decline is statistically significant. The table below shows the mean and median number of placements for each care episode.

Table 5: Number of Placements per Episode

Year	Average Number of Placements	Median Number of Placements
2015	2.3	1
2016	2.3	1
2017	2.2	1
2018	2.1	1
2019	2.1	1
2020	2.1	1

The table below shows a fuller picture, providing the percentage of children placed in different number of placement episodes, by year, and indicates that the number with only one placement has increased some over time.[20]

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[20] For about 85% of children in care, their current removal episode is their only one. In other words, most children are not going into and out of care.

Table 6: Number of Placements For Current Episode, by Year of Data

Number of Placements	2015	2016	2017	2018	2019	2020
1	51%	52%	55%	55%	56%	56%
2	24%	23%	22%	22%	21%	21%
3	11%	11%	10%	10%	10%	11%
4	5%	5%	5%	5%	5%	5%
5 or more	9%	9%	8%	8%	8%	8%
Total	100%	100%	100%	100%	100%	100%

VI.   Conclusions

As stated above, my findings are as follows.

a) The nine named plaintiffs do not comprise a statistical sample, and therefore cannot be assumed to be representative of the class or subclasses.
b) The nine named plaintiffs differ substantially from the proposed class with respect to their background prior to foster care and with respect to their experiences in foster care.
c) I reviewed West Virginia's foster care data over the last five years and found the following:
   1. The number of children in care increased.
   2. The percentage of children in group homes has declined.
   3. The percentage of children placed with families has increased.
   4. The percentage of children placed out of state has not changed substantially.
   5. The number of placements per episode of care has declined or remained the same.

Alan J Salzberg   _____11/13/2020_____
Alan J. Salzberg   Date

APPENDIX I: Supplemental Tables

The age of children in care has remained fairly stable but children in care more recently tend to be a little younger than children in care five years ago. In 2020, most children in care are 8 years old or younger. In 2015, most children in care were 10 years old or younger. The table below shows the percent of children in care at or below each age from birth to age 20.

Table 7: Percent of Children in Care at or Below each Age

At or Below Age	2015	2016	2017	2018	2019	2020
0	6%	6%	7%	7%	7%	7%
1	14%	14%	15%	15%	15%	15%
2	21%	21%	22%	22%	22%	21%
3	26%	27%	27%	28%	27%	27%
4	31%	32%	33%	34%	33%	33%
5	36%	38%	39%	39%	38%	38%
6	41%	42%	44%	44%	43%	43%
7	45%	47%	49%	49%	48%	48%
8	49%	51%	53%	54%	53%	52%
9	53%	55%	57%	58%	58%	57%
10	57%	59%	61%	62%	62%	62%
11	60%	63%	65%	66%	66%	66%
12	64%	66%	69%	70%	70%	70%
13	68%	71%	73%	74%	75%	75%
14	74%	76%	78%	79%	80%	80%
15	81%	82%	83%	85%	85%	85%
16	89%	90%	90%	91%	91%	92%
17	97%	97%	97%	97%	97%	97%
18	100%	100%	100%	100%	100%	100%
19	100%	100%	100%	100%	100%	100%
20	100%	100%	100%	100%	100%	100%

The following table shows the age of children in care with disabilities, as a percentage of all children in care with disabilities.

Table 8: Percent of Children With Disabilities in Care at or Below each Age

At or Below Age	2015	2016	2017	2018	2019	2020
0	1%	0%	1%	1%	2%	3%
1	2%	1%	1%	3%	5%	8%
2	3%	2%	2%	4%	7%	10%

3	3%	3%	3%	4%	8%	12%
4	4%	3%	3%	5%	9%	13%
5	5%	4%	4%	6%	11%	14%
6	6%	5%	5%	7%	12%	15%
7	7%	7%	6%	9%	13%	17%
8	9%	9%	8%	11%	15%	19%
9	12%	11%	11%	13%	18%	21%
10	15%	15%	13%	15%	21%	24%
11	18%	18%	17%	19%	24%	28%
12	23%	23%	22%	24%	29%	32%
13	29%	30%	29%	31%	36%	40%
14	40%	41%	39%	41%	46%	49%
15	56%	55%	53%	55%	58%	62%
16	73%	73%	71%	73%	75%	77%
17	92%	91%	91%	91%	92%	93%
18	99%	99%	99%	99%	100%	99%
19	100%	100%	100%	100%	100%	100%
20	100%	100%	100%	100%	100%	100%

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APPENDIX II: Programs, Files, and Logs Used to Perform Analyses

I combined the raw AFCARS data described above into a file called "afcarsall.txt". I created a program in the software package Stata to read in that file using a "dictionary" file (afcars20201022.dct) and perform my data analysis. Below I provide that program that I created to analyze the data and the log file that was produced when I ran that program.

Stata Program Used for Analysis

```
clear
capture log close
log using afcarssummary20201112.log, replace

quietly infix using afcars20201022.dct
* drop extraneous data
drop if substr(reportenddate,1,2)!="20"

save afcarsall.dta, replace

use afcarsall.dta

gen named="Other"
replace named ="KW" if RN_child=="203926282228"
replace named ="SS" if RN_child=="201324222232"
replace named ="JR" if RN_child=="201529232256"
replace named ="JR" if RN_child=="207621262237"
replace named ="TS" if RN_child=="263624202262"
replace named ="TS" if RN_child=="206921292292"
replace named ="GM" if RN_child=="245327272263"
replace named ="AL" if RN_child=="243620292229"
replace named ="AM" if RN_child=="267423232277"
replace named ="DC" if RN_child=="207525292289"
replace named ="DC" if RN_child=="274229252249"
replace named ="GC" if RN_child=="200823222278"
gen namedind=named!="Other"

* format DOB
gen yearrecent=real(substr(daterecentreview,1,4))
gen YOB_child=real(substr(DOB,1,4))
gen MOB_child=real(substr(DOB,5,2))
gen DOB_child=real(substr(DOB,7,2))
* format dates
gen year_report=real(substr(reportenddate,1,4))
gen month_report=real(substr(reportenddate,5,2))
gen daterev=date(substr(daterecentreview,1,4)+"-" +
substr(daterecentreview,5,2) + "-" +
substr(daterecentreview,7,2),"YMD")
gen daterep=date(string(year_report) + "-" + string(month_report) + "-
15","YMD")
gen dayssince =daterep-daterev if daterev!=.
```

14

```
* drop records with error in DOB (born before 1900) and/or yearrecent
drop if real(DOB)<19000000
gen useable=(yearrecent>2000 | yearrecent==.)
keep if useable==1
gen age_child=year_report - YOB_child
replace age_child =age_child -1 if MOB_child >=month_report &
age_child!=0

gen ageatfirstremoval=trunc((real(datefirstremove) - real(DOB))/10000)
replace ageatfirstremoval=. if ageatfirstremoval<0
gen agemostrecent=trunc((real(datelastremove) - real(DOB))/10000)
replace agemostrecent=. if agemostrecent<0

gen yearfirstremove=real(substr( datefirstremove,1,4))

*
* Comparisons to Named Plaintiffs
*

* should be a very small number of dups
bysort reportenddate RN_child: keep if _n==1

tab age_child namedind if reportenddate=="202003" & useable
gen age_lt7=age_child<7
gen age_lt11=age_child<11
table namedind if reportenddate=="202003" & useable, c(mean age_lt7
mean age_lt11) format(%6.2f)

* disability
tab Disability namedind if reportenddate=="202003", col

* mental development
tab MentalDev namedind  if reportenddate=="202003" & useable, col

* emotionally disturbed
tab  emotiondisturb  namedind if reportenddate=="202003", col

destring out_of_state, replace
replace out_of_state=0 if out_of_state==2
table namedind if reportenddate=="202003" & useable, c(mean
out_of_state n out_of_state)

destring curr_placement_setting, replace
 label define placea 1 "Pre-Adoptive Home" 2 "Foster Family Home
(Relative)" 3 "Foster Family Home (Non-Relative)"
 label define placea 4 "Group Home" 5 "Institution" 6 "Supervised
Independent Living" 7 "Runaway" 8 "Trial Home Visit", add
label values curr_placement_setting placea

tab curr_placement_setting namedind if reportenddate=="202003", col
```

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```
* number of placements
destring episode_no_prevplace, replace
table namedind if reportenddate=="202003" & useable, c(mean
episode_no_prevplace median episode_no_prevplace n
episode_no_prevplace )
gen placementslte3=episode_no_prevplace<=3
table namedind if reportenddate=="202003" & useable, c(mean
placementslte3 n placementslte3)

* last removal
 gen yearssincelastremove=1+int((real(reportenddate)*100 -
real(datelastremove))/10000)
 gen yearssincefirstremove=1+int((real(reportenddate)*100 -
real(datefirstremove))/10000)
 * less than this many years
 tab yearssincelastremove namedind if reportenddate=="202003" &
useable
 tab yearssincefirstremove namedind if reportenddate=="202003" &
useable

* first removal
gen yearlastlte3=yearssincelastremove<=3
gen yearfirstlte3=yearssincefirstremove<=3
tab yearssincelastremove namedind if  reportenddate=="202003"
tab yearssincefirstremove namedind if  reportenddate=="202003"
table namedind  if reportenddate=="202003" & useable, c(mean
yearlastlte3 mean yearfirstlte3 n yearlastlte3)
*
* plan goal 1=reunify with parents/caretakers 3 adoption;
5=emancipation;
tab plangoal_mostrecent namedind if reportenddate=="202003" & useable,
col

*
*
* Profile of Care
*
*

* snapshot of number in care
table reportenddate if foster_dischargedate==""
table reportenddate

gen reportyear=real(substr(reportenddate,1,4))
gen fosterfamilyhome=inlist(curr_placement,2,3)
gen fosternonrelative=inlist(curr_placement,3)
gen grouphome=inlist(curr_placement,4)

* stat sign
pwcorr reportyear fosternonrelative fosterfamilyhome grouphome
curr_placement_setting episode_no_prevplace out_of_state, sig
```

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```
table reportyear if curr_placement!=., c(mean fosterfamilyhome)
tab grouphome reportyear if curr_placement!=., col chi2

gen settingtype="foster_pre_ind_trial" if
inlist(curr_placement_setting,1,2,3,6,8)
replace settingtype="group home" if inlist(curr_placement_setting,4)
replace settingtype="Institution" if inlist(curr_placement_setting,5)
tab curr_placement_setting reportyear, col nofreq
tab curr_placement_setting reportyear if age_child>=12 &
age_child<=17, col nofreq

table reportyear, c(mean out_of_state sum out_of_state)
table reportyear, c(mean episode_no_prevplace median
episode_no_prevplace n episode_no_prevplace )
*
* for most children, it's the first removal
gen firstremove=( datefirstremove== datelastremove)
table reportyear, c(mean firstremove)

replace episode_no_prevplace=1 if episode_no_prevplace<1
* note that 5 is 5 or more
replace episode_no_prevplace=5 if episode_no_prevplace>5
tab episode_no_prevplace reportyear, col nofreq

* raw numbers (note that 2016-2019 have two reporting periods so
double the number of children)
tab age_child reportyear
tab age_child reportyear if Disability=="1"

*percentages

 tab age_child reportyear, col nofreq
 tab age_child reportyear if Disability=="1" , col nofreq

save tmp1, replace
log close
```

Program Log Showing Output From Stata Program

```
     log:
D:\clients_2018\WVa_brownandpeisch\programsdata\afcarssummary20201112.log
  log type:  text
 opened on:  12 Nov 2020, 11:44:37

.
. quietly infix using afcars20201022.dct

. * drop extraneous data
. drop if substr(reportenddate,1,2)!="20"
(21 observations deleted)
```

17

```
.
. save afcarsall.dta, replace
file afcarsall.dta saved


.
. use afcarsall.dta


.
. gen named="Other"

. replace named ="KW" if RN_child=="203926282228"
(8 real changes made)

. replace named ="SS" if RN_child=="201324222232"
(3 real changes made)

. replace named ="JR" if RN_child=="201529232256"
(0 real changes made)

. replace named ="JR" if RN_child=="207621262237"
(8 real changes made)

. replace named ="TS" if RN_child=="263624202262"
(0 real changes made)

. replace named ="TS" if RN_child=="206921292292"
(9 real changes made)

. replace named ="GM" if RN_child=="245327272263"
(10 real changes made)

. replace named ="AL" if RN_child=="243620292229"
(9 real changes made)

. replace named ="AM" if RN_child=="267423232277"
(3 real changes made)

. replace named ="DC" if RN_child=="207525292289"
(0 real changes made)

. replace named ="DC" if RN_child=="274229252249"
(10 real changes made)

. replace named ="GC" if RN_child=="200823222278"
(9 real changes made)

. gen namedind=named!="Other"


.
. * format DOB
. gen yearrecent=real(substr(daterecentreview,1,4))
(12,978 missing values generated)

. gen YOB_child=real(substr(DOB,1,4))
(43 missing values generated)
```

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```
. gen MOB_child=real(substr(DOB,5,2))
(11 missing values generated)

. gen DOB_child=real(substr(DOB,7,2))
(24 missing values generated)

. * format dates
. gen year_report=real(substr(reportenddate,1,4))

. gen month_report=real(substr(reportenddate,5,2))

. gen daterev=date(substr(daterecentreview,1,4)+"-" +
substr(daterecentreview,5,2) + "-" + substr(daterecentreview,7,2),"Y
> MD")
(18,815 missing values generated)

. gen daterep=date(string(year_report) + "-" + string(month_report) + "-
15","YMD")

. gen dayssince =daterep-daterev if daterev!=.
(18,815 missing values generated)

. * drop records with error in DOB (born before 1900) and/or yearrecent
. drop if real(DOB)<19000000
(6,230 observations deleted)

. gen useable=(yearrecent>2000 | yearrecent==.)

. keep if useable==1
(32 observations deleted)

. gen age_child=year_report - YOB_child
(11 missing values generated)

. replace age_child =age_child -1 if MOB_child >=month_report & age_child!=0
(50,823 real changes made)

.
. gen ageatfirstremoval=trunc((real(datefirstremove) - real(DOB))/10000)
(11 missing values generated)

. replace ageatfirstremoval=. if ageatfirstremoval<0
(15 real changes made, 15 to missing)

. gen agemostrecent=trunc((real(datelastremove) - real(DOB))/10000)
(11 missing values generated)

. replace agemostrecent=. if agemostrecent<0
(1 real change made, 1 to missing)

.
. gen yearfirstremove=real(substr( datefirstremove,1,4))

.
. *
```

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```
. * Comparisons to Named Plaintiffs
. *
.
. * should be a very small number of dups
. bysort reportenddate RN_child: keep if _n==1
(2 observations deleted)


.
. tab age_child namedind if reportenddate=="202003" & useable

           |        namedind
 age_child |        0          1 |     Total
-----------+----------------------+----------
         0 |      747          0 |       747
         1 |      786          0 |       786
         2 |      596          0 |       596
         3 |      598          0 |       598
         4 |      551          0 |       551
         5 |      498          0 |       498
         6 |      500          0 |       500
         7 |      503          1 |       504
         8 |      474          0 |       474
         9 |      472          0 |       472
        10 |      457          0 |       457
        11 |      428          2 |       430
        12 |      405          0 |       405
        13 |      455          2 |       457
        14 |      505          0 |       505
        15 |      553          1 |       554
        16 |      634          1 |       635
        17 |      580          2 |       582
        18 |      240          0 |       240
        19 |       25          0 |        25
-----------+----------------------+----------
     Total |   10,007          9 |    10,016

. gen age_lt7=age_child<7

. gen age_lt11=age_child<11

. table namedind if reportenddate=="202003" & useable, c(mean age_lt7 mean
age_lt11) format(%6.2f)

------------------------------------------
 namedind | mean(age_lt7)  mean(age_lt11)
----------+-------------------------------
        0 |         0.43            0.62
        1 |         0.00            0.11
------------------------------------------


.
. * disability
. tab Disability namedind if reportenddate=="202003", col

+-------------------+
| Key               |
```

```
|------------------|
|     frequency    |
| column percentage |
+------------------+


           |        namedind
Disability |       0          1 |    Total
-----------+--------------------+----------
         1 |     1,609         8 |    1,617
           |     16.08     88.89 |    16.14
-----------+--------------------+----------
         2 |     6,520         1 |    6,521
           |     65.15     11.11 |    65.11
-----------+--------------------+----------
         3 |     1,878         0 |    1,878
           |     18.77      0.00 |    18.75
-----------+--------------------+----------
     Total |    10,007         9 |   10,016
           |    100.00    100.00 |   100.00

.
. * mental development
. tab MentalDev namedind  if reportenddate=="202003" & useable, col

+------------------+
| Key              |
|------------------|
|     frequency    |
| column percentage |
+------------------+


           |        namedind
  MentalDev |       0          1 |    Total
-----------+--------------------+----------
         0 |     9,966         7 |    9,973
           |     99.59     77.78 |    99.57
-----------+--------------------+----------
         1 |        41         2 |       43
           |      0.41     22.22 |     0.43
-----------+--------------------+----------
     Total |    10,007         9 |   10,016
           |    100.00    100.00 |   100.00

.
. * emotionally disturbed
. tab  emotiondisturb  namedind if reportenddate=="202003", col

+------------------+
| Key              |
|------------------|
|     frequency    |
| column percentage |
+------------------+

emotiondis |        namedind
      turb |       0          1 |    Total
```

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```
-----------+---------------------+----------
         0 |      8,810           3 |      8,813
           |      88.04       33.33 |      87.99
-----------+---------------------+----------
         1 |      1,197           6 |      1,203
           |      11.96       66.67 |      12.01
-----------+---------------------+----------
     Total |     10,007           9 |     10,016
           |     100.00      100.00 |     100.00

.
. destring out_of_state, replace
out_of_state: all characters numeric; replaced as byte

. replace out_of_state=0 if out_of_state==2
(81,481 real changes made)

. table namedind if reportenddate=="202003" & useable, c(mean out_of_state n
out_of_state)

--------------------------------------------
 namedind | mean(out_of~e)     N(out_of~e)
----------+---------------------------------
        0 |      .06205656          10,007
        1 |      .44444445               9
--------------------------------------------


.
. destring curr_placement_setting, replace
curr_placement_setting: all characters numeric; replaced as byte
(501 missing values generated)

.   label define placea 1 "Pre-Adoptive Home" 2 "Foster Family Home
(Relative)" 3 "Foster Family Home (Non-Relative)"

.   label define placea 4 "Group Home" 5 "Institution" 6 "Supervised
Independent Living" 7 "Runaway" 8 "Trial Home Visit",
> add

. label values curr_placement_setting placea


.
. tab curr_placement_setting namedind if reportenddate=="202003", col

+------------------+
| Key              |
|------------------|
|     frequency    |
| column percentage |
+------------------+

curr_placement_settin |      namedind
                    g |        0          1 |     Total
----------------------+---------------------+----------
    Pre-Adoptive Home |      138           0 |       138
                      |     1.39       0.00 |      1.39
```

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```
---------------------+--------------------+---------
Foster Family Home (R |      1,726          0 |      1,726
                      |      17.35       0.00 |      17.33
---------------------+--------------------+---------
Foster Family Home (N |      5,926          2 |      5,928
                      |      59.56      22.22 |      59.52
---------------------+--------------------+---------
          Group Home |      1,242          6 |      1,248
                      |      12.48      66.67 |      12.53
---------------------+--------------------+---------
         Institution |        331          1 |        332
                      |       3.33      11.11 |       3.33
---------------------+--------------------+---------
Supervised Independen |         38          0 |         38
                      |       0.38       0.00 |       0.38
---------------------+--------------------+---------
             Runaway |         55          0 |         55
                      |       0.55       0.00 |       0.55
---------------------+--------------------+---------
    Trial Home Visit |        494          0 |        494
                      |       4.96       0.00 |       4.96
---------------------+--------------------+---------
               Total |      9,950          9 |      9,959
                      |     100.00     100.00 |     100.00
```

```
.
. * number of placements
. destring episode_no_prevplace, replace
episode_no_prevplace: all characters numeric; replaced as byte

. table namedind if reportenddate=="202003" & useable, c(mean
episode_no_prevplace median episode_no_prevplace n episode_n
> o_prevplace )

----------------------------------------------------------
 namedind | mean(episod~e)   med(episod~e)     N(episod~e)
----------+-----------------------------------------------
        0 |      2.0936344               1          10,007
        1 |      8.2222223               8               9
----------------------------------------------------------

. gen placementslte3=episode_no_prevplace<=3

. table namedind if reportenddate=="202003" & useable, c(mean placementslte3
n placementslte3)

------------------------------------------
 namedind | mean(placem~3)    N(placem~3)
----------+-------------------------------
        0 |      .8718897          10,007
        1 |             0               9
------------------------------------------

.
. * last removal
```

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```
.  gen yearssincelastremove=1+int((real(reportenddate)*100 -
real(datelastremove))/10000)

.  gen yearssincefirstremove=1+int((real(reportenddate)*100 -
real(datefirstremove))/10000)

.  * less than this many years
.  tab yearssincelastremove namedind if reportenddate=="202003" & useable
```

yearssince lastremove	namedind 0	1	Total
1	5,303	0	5,303
2	2,931	2	2,933
3	1,130	0	1,130
4	376	3	379
5	124	2	126
6	59	1	60
7	31	1	32
8	16	0	16
9	10	0	10
10	7	0	7
11	6	0	6
12	6	0	6
13	4	0	4
14	3	0	3
16	1	0	1
Total	10,007	9	10,016

```
.  tab yearssincefirstremove namedind if reportenddate=="202003" & useable
```

yearssince firstremove	namedind 0	1	Total
1	4,525	0	4,525
2	2,786	2	2,788
3	1,267	0	1,267
4	548	3	551
5	263	1	264
6	173	0	173
7	106	1	107
8	77	0	77
9	52	0	52
10	51	1	52
11	29	0	29
12	31	0	31
13	40	0	40
14	20	0	20
15	13	0	13
16	12	0	12
17	9	1	10
18	4	0	4
21	1	0	1

24

```
      Total |    10,007          9 |    10,016


.
. * first removal
. gen yearlastlte3=yearssincelastremove<=3

. gen yearfirstlte3=yearssincefirstremove<=3

. tab yearssincelastremove namedind if  reportenddate=="202003"

yearssince |        namedind
lastremove |         0            1 |     Total
-----------+----------------------+----------
         1 |     5,303          0 |     5,303
         2 |     2,931          2 |     2,933
         3 |     1,130          0 |     1,130
         4 |       376          3 |       379
         5 |       124          2 |       126
         6 |        59          1 |        60
         7 |        31          1 |        32
         8 |        16          0 |        16
         9 |        10          0 |        10
        10 |         7          0 |         7
        11 |         6          0 |         6
        12 |         6          0 |         6
        13 |         4          0 |         4
        14 |         3          0 |         3
        16 |         1          0 |         1
-----------+----------------------+----------
     Total |    10,007          9 |    10,016

. tab yearssincefirstremove namedind if  reportenddate=="202003"

yearssince |
firstremov |        namedind
         e |         0            1 |     Total
-----------+----------------------+----------
         1 |     4,525          0 |     4,525
         2 |     2,786          2 |     2,788
         3 |     1,267          0 |     1,267
         4 |       548          3 |       551
         5 |       263          1 |       264
         6 |       173          0 |       173
         7 |       106          1 |       107
         8 |        77          0 |        77
         9 |        52          0 |        52
        10 |        51          1 |        52
        11 |        29          0 |        29
        12 |        31          0 |        31
        13 |        40          0 |        40
        14 |        20          0 |        20
        15 |        13          0 |        13
        16 |        12          0 |        12
        17 |         9          1 |        10
        18 |         4          0 |         4
        21 |         1          0 |         1
```

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```
-----------+---------------------+----------
     Total |   10,007          9 |   10,016

. table namedind  if reportenddate=="202003" & useable, c(mean yearlastlte3
mean yearfirstlte3 n yearlastlte3)

----------------------------------------------------------
 namedind | mean(yearla~3)  mean(yearfi~3)   N(yearla~3)
----------+-----------------------------------------------
        0 |        .935745            .8572        10,007
        1 |       .2222222         .2222222             9
----------------------------------------------------------

 . *
 . * plan goal 1=reunify with parents/caretakers 3 adoption; 5=emancipation;
 . tab plangoal_mostrecent namedind if reportenddate=="202003" & useable, col

+-------------------+
| Key               |
|-------------------|
|      frequency    |
| column percentage |
+-------------------+

plangoal_m |      namedind
 ostrecent |        0          1 |    Total
-----------+---------------------+----------
         1 |    5,358          2 |    5,360
           |    56.90      22.22 |    56.87
-----------+---------------------+----------
         2 |      149          0 |      149
           |     1.58       0.00 |     1.58
-----------+---------------------+----------
         3 |    2,978          6 |    2,984
           |    31.63      66.67 |    31.66
-----------+---------------------+----------
         4 |       19          0 |       19
           |     0.20       0.00 |     0.20
-----------+---------------------+----------
         5 |      106          1 |      107
           |     1.13      11.11 |     1.14
-----------+---------------------+----------
         6 |      561          0 |      561
           |     5.96       0.00 |     5.95
-----------+---------------------+----------
         7 |      245          0 |      245
           |     2.60       0.00 |     2.60
-----------+---------------------+----------
     Total |    9,416          9 |    9,425
           |   100.00     100.00 |   100.00

 .
 . *
 . *
 . * Profile of Care
 . *
```

```
. *
.
. * snapshot of number in care
. table reportenddate if foster_dischargedate==""

----------------------
reportend |
date      |      Freq.
----------+-----------
   201509 |      4,966
   201603 |      5,295
   201609 |      5,751
   201703 |      6,234
   201709 |      6,784
   201803 |      6,968
   201809 |      7,279
   201903 |      7,350
   201909 |      7,388
   202003 |      7,690
----------------------

. table reportenddate

----------------------
reportend |
date      |      Freq.
----------+-----------
   201509 |      6,811
   201603 |      6,995
   201609 |      7,645
   201703 |      8,055
   201709 |      8,831
   201803 |      9,233
   201809 |      9,545
   201903 |      9,707
   201909 |      9,948
   202003 |     10,016
----------------------

.
. gen reportyear=real(substr(reportenddate,1,4))

. gen fosterfamilyhome=inlist(curr_placement,2,3)

. gen fosternonrelative=inlist(curr_placement,3)

. gen grouphome=inlist(curr_placement,4)

.
. * stat sign
. pwcorr reportyear fosternonrelative fosterfamilyhome grouphome
curr_placement_setting episode_no_prevplace out_of_state,
>  sig

             | report~r foste~ve foste~me grouph~e curr_p~g episod~e out_of~e
-------------+-------------------------------------------------------------
```

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```
  reportyear |   1.0000
             |
             |
 fosternonr~e |   0.0730    1.0000
             |   0.0000
             |
 fosterfami~e |   0.0811    0.6861    1.0000
             |   0.0000    0.0000
             |
    grouphome |  -0.0581   -0.4182   -0.6096    1.0000
             |   0.0000    0.0000    0.0000
             |
 curr_place~g |  -0.0302   -0.1718   -0.5080    0.2049    1.0000
             |   0.0000    0.0000    0.0000    0.0000
             |
 episode_no~e |  -0.0259   -0.0396   -0.1530    0.1595    0.0831    1.0000
             |   0.0000    0.0000    0.0000    0.0000    0.0000
             |
 out_of_state |   0.0058   -0.1601   -0.2311    0.2153    0.0732    0.1233    1.0000
             |   0.0848    0.0000    0.0000    0.0000    0.0000    0.0000
             |

.
. table reportyear if curr_placement!=., c(mean fosterfamilyhome)

--------------------------
reportyea |
r         | mean(foster~e)
----------+---------------
     2015 |       .619097
     2016 |      .6417458
     2017 |      .6755598
     2018 |      .6833867
     2019 |      .7039369
     2020 |      .7685511
--------------------------

. tab grouphome reportyear if curr_placement!=., col chi2

+------------------+
| Key              |
|------------------|
|     frequency    |
| column percentage |
+------------------+

           |                          reportyear
 grouphome |    2015      2016      2017      2018      2019      2020
|    Total
-----------+------------------------------------------------------------
-+----------
        0 |    5,389    11,982    14,274    16,061    16,968     8,711
|   73,385
          |    79.78     82.49     85.00     85.80     86.87     87.47
|    85.05
```

```
-----------+---------------------------------------------------------------
-+----------
         1 |     1,366     2,544     2,518     2,659     2,565     1,248
|   12,900
           |     20.22     17.51     15.00     14.20     13.13     12.53
|    14.95
-----------+---------------------------------------------------------------
-+----------
     Total |     6,755    14,526    16,792    18,720    19,533     9,959
|   86,285
           |    100.00    100.00    100.00    100.00    100.00    100.00
|   100.00

         Pearson chi2(5) = 327.5573   Pr = 0.000


.
. gen settingtype="foster_pre_ind_trial" if
inlist(curr_placement_setting,1,2,3,6,8)
(16,916 missing values generated)

. replace settingtype="group home" if inlist(curr_placement_setting,4)
(12,900 real changes made)

. replace settingtype="Institution" if inlist(curr_placement_setting,5)
(2,990 real changes made)

. tab curr_placement_setting reportyear, col nofreq

curr_placement_settin |                      reportyear
                    g |    2015      2016      2017      2018      2019
2020 |    Total
----------------------+---------------------------------------------------
------------+----------
    Pre-Adoptive Home |     6.19      6.61      6.25      6.90      6.87
1.39 |     6.03
Foster Family Home (R |    16.57     17.47     18.79     19.27     17.75
17.33 |    18.09
Foster Family Home (N |    45.34     46.70     48.76     49.07     52.64
59.52 |    50.34
           Group Home |    20.22     17.51     15.00     14.20     13.13
12.53 |    14.95
          Institution |     3.42      3.62      3.69      3.39      3.32
3.33 |     3.47
Supervised Independen |     0.56      0.53      0.44      0.39      0.43
0.38 |     0.45
              Runaway |     0.53      0.65      0.67      0.59      0.59
0.55 |     0.61
     Trial Home Visit |     7.17      6.90      6.40      6.19      5.26
4.96 |     6.08
----------------------+---------------------------------------------------
------------+----------
                Total |   100.00    100.00    100.00    100.00    100.00
100.00 |    100.00

. tab curr_placement_setting reportyear if age_child>=12 & age_child<=17, col
nofreq
```

29

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```
curr_placement_settin |                        reportyear
                    g |    2015      2016      2017      2018      2019
2020 |     Total
----------------------+-------------------------------------------------
------------+----------
    Pre-Adoptive Home |    2.26      2.45      2.04      3.87      3.51
0.87 |      2.70
Foster Family Home (R |    9.86      9.97     12.90     13.57     13.89
13.40 |     12.52
Foster Family Home (N |   22.56     25.53     27.30     27.57     31.26
35.53 |     28.41
           Group Home |   48.83     44.71     40.97     39.46     36.62
34.60 |     40.35
          Institution |    7.15      8.42      9.31      8.49      8.23
8.63 |      8.48
Supervised Independen |    0.33      0.18      0.26      0.17      0.27
0.16 |      0.23
              Runaway |    1.23      1.70      1.59      1.56      1.45
1.42 |      1.52
     Trial Home Visit |    7.77      7.05      5.64      5.30      4.79
5.38 |      5.79
----------------------+-------------------------------------------------
------------+----------
                Total |  100.00    100.00    100.00    100.00    100.00
100.00 |    100.00

.
. table reportyear, c(mean out_of_state sum out_of_state)

--------------------------------------------
reportyea |
r         | mean(out_of~e)   sum(out_of~e)
----------+---------------------------------
     2015 |      .06372045             434
     2016 |      .05273224             772
     2017 |      .06289234            1062
     2018 |      .06496964            1220
     2019 |      .06064615            1192
     2020 |      .06240016             625
--------------------------------------------

. table reportyear, c(mean episode_no_prevplace median episode_no_prevplace n
episode_no_prevplace )

-----------------------------------------------------------
reportyea |
r         | mean(episod~e)   med(episod~e)      N(episod~e)
----------+------------------------------------------------
     2015 |       2.266187               1            6,811
     2016 |      2.2537568               1           14,640
     2017 |      2.1521971               1           16,886
     2018 |       2.102407               1           18,778
     2019 |      2.0911727               1           19,655
     2020 |      2.0991414               1           10,016
-----------------------------------------------------------
```

```
. *
. * for most children, it's the first removal
. gen firstremove=( datefirstremove== datelastremove)

. table reportyear, c(mean firstremove)

--------------------------
reportyea |
r         | mean(firstr~e)
----------+---------------
     2015 |        .8204376
     2016 |        .8244535
     2017 |        .8441905
     2018 |        .8500373
     2019 |        .8514373
     2020 |        .8510383
--------------------------

.
. replace episode_no_prevplace=1 if episode_no_prevplace<1
(9 real changes made)

. * note that 5 is 5 or more
. replace episode_no_prevplace=5 if episode_no_prevplace>5
(4,840 real changes made)

. tab episode_no_prevplace reportyear, col nofreq

episode_no |                     reportyear
_prevplace |    2015      2016      2017      2018      2019      2020
|     Total
-----------+------------------------------------------------------------------
-+----------
         1 |    51.12     51.75     55.09     55.31     56.10     55.59
|     54.55
         2 |    23.61     23.33     21.88     22.22     21.03     20.88
|     22.03
         3 |    11.00     10.62      9.75      9.70      9.83     10.64
|     10.11
         4 |     5.39      5.48      4.86      4.95      5.07      4.69
|      5.05
         5 |     8.88      8.82      8.42      7.82      7.96      8.20
|      8.26
-----------+------------------------------------------------------------------
-+----------
     Total |   100.00    100.00    100.00    100.00    100.00    100.00
|    100.00

.
. * raw numbers (note that 2016-2019 have two reporting periods so double the
number of children)
. tab age_child reportyear

           |                           reportyear
```

```
 age_child |      2015        2016        2017        2018        2019        2020
|    Total
-----------+------------------------------------------------------------------
-+----------
         0 |       409         943       1,230       1,333       1,389         747
|     6,051
         1 |       529       1,111       1,232       1,520       1,553         786
|     6,731
         2 |       460         995       1,200       1,248       1,285         596
|     5,784
         3 |       371         884         969       1,173       1,128         598
|     5,123
         4 |       352         810         992       1,038       1,093         551
|     4,836
         5 |       338         752         891       1,028       1,023         498
|     4,530
         6 |       317         714         869         948       1,040         500
|     4,388
         7 |       301         687         845         927         997         504
|     4,261
         8 |       274         606         745         885         943         474
|     3,927
         9 |       275         579         702         831         938         472
|     3,797
        10 |       259         575         660         764         855         457
|     3,570
        11 |       224         521         629         746         794         430
|     3,344
        12 |       268         532         617         706         782         405
|     3,310
        13 |       277         626         696         830         835         457
|     3,721
        14 |       369         745         812         863         991         505
|     4,285
        15 |       489         934         980       1,083       1,069         554
|     5,109
        16 |       543       1,116       1,140       1,196       1,229         635
|     5,859
        17 |       532       1,030       1,165       1,123       1,192         582
|     5,624
        18 |       202         427         474         494         478         240
|     2,315
        19 |        21          47          36          39          39          25
|       207
        20 |         0           2           0           1           0           0
|         3
-----------+------------------------------------------------------------------
-+----------
     Total |     6,810      14,636      16,884      18,776      19,653      10,016
|    86,775

. tab age_child reportyear if Disability=="1"

           |                         reportyear
 age_child |      2015        2016        2017        2018        2019        2020
|    Total
```

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```
-----------+----------------------------------------------------------------
-+----------
         0 |         10          13          25          44          74          51
|       217
         1 |         25          28          21          42          95          79
|       290
         2 |         11          28          20          27          55          39
|       180
         3 |          7          22          15          19          30          25
|       118
         4 |         10          21          23          27          40          16
|       137
         5 |         16          24          20          25          36          23
|       144
         6 |         19          39          38          36          35          17
|       184
         7 |         32          50          38          38          52          25
|       235
         8 |         31          70          52          61          61          27
|       302
         9 |         44          81          74          61          79          38
|       377
        10 |         56         108          81          77          94          43
|       459
        11 |         52         111         119          97         117          67
|       563
        12 |         83         158         143         148         140          71
|       743
        13 |        115         228         221         225         213         119
|     1,121
        14 |        182         356         313         291         338         149
|     1,629
        15 |        271         467         446         414         374         218
|     2,190
        16 |        302         610         552         531         524         241
|     2,760
        17 |        326         589         619         540         532         254
|     2,860
        18 |        131         262         242         255         236         102
|     1,228
        19 |         12          22          22          21          14          13
|       104
        20 |          0           2           0           1           0           0
|         3
-----------+----------------------------------------------------------------
-+----------
     Total |      1,735       3,289       3,084       2,980       3,139       1,617
|    15,844

.
. *percentages
.
.  tab age_child reportyear, col nofreq

          |                              reportyear
```

age_child	2015	2016	2017	2018	2019	2020	Total
0	6.01	6.44	7.29	7.10	7.07	7.46	6.97
1	7.77	7.59	7.30	8.10	7.90	7.85	7.76
2	6.75	6.80	7.11	6.65	6.54	5.95	6.67
3	5.45	6.04	5.74	6.25	5.74	5.97	5.90
4	5.17	5.53	5.88	5.53	5.56	5.50	5.57
5	4.96	5.14	5.28	5.48	5.21	4.97	5.22
6	4.65	4.88	5.15	5.05	5.29	4.99	5.06
7	4.42	4.69	5.00	4.94	5.07	5.03	4.91
8	4.02	4.14	4.41	4.71	4.80	4.73	4.53
9	4.04	3.96	4.16	4.43	4.77	4.71	4.38
10	3.80	3.93	3.91	4.07	4.35	4.56	4.11
11	3.29	3.56	3.73	3.97	4.04	4.29	3.85
12	3.94	3.63	3.65	3.76	3.98	4.04	3.81
13	4.07	4.28	4.12	4.42	4.25	4.56	4.29
14	5.42	5.09	4.81	4.60	5.04	5.04	4.94
15	7.18	6.38	5.80	5.77	5.44	5.53	5.89
16	7.97	7.63	6.75	6.37	6.25	6.34	6.75
17	7.81	7.04	6.90	5.98	6.07	5.81	6.48
18	2.97	2.92	2.81	2.63	2.43	2.40	2.67
19	0.31	0.32	0.21	0.21	0.20	0.25	0.24
20	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

. tab age_child reportyear if Disability=="1" , col nofreq

			reportyear				
age_child	2015	2016	2017	2018	2019	2020	Total

```
-----------+---------------------------------------------------------------
-+----------
          0 |     0.58       0.40       0.81       1.48       2.36       3.15
|     1.37
          1 |     1.44       0.85       0.68       1.41       3.03       4.89
|     1.83
          2 |     0.63       0.85       0.65       0.91       1.75       2.41
|     1.14
          3 |     0.40       0.67       0.49       0.64       0.96       1.55
|     0.74
          4 |     0.58       0.64       0.75       0.91       1.27       0.99
|     0.86
          5 |     0.92       0.73       0.65       0.84       1.15       1.42
|     0.91
          6 |     1.10       1.19       1.23       1.21       1.12       1.05
|     1.16
          7 |     1.84       1.52       1.23       1.28       1.66       1.55
|     1.48
          8 |     1.79       2.13       1.69       2.05       1.94       1.67
|     1.91
          9 |     2.54       2.46       2.40       2.05       2.52       2.35
|     2.38
         10 |     3.23       3.28       2.63       2.58       2.99       2.66
|     2.90
         11 |     3.00       3.37       3.86       3.26       3.73       4.14
|     3.55
         12 |     4.78       4.80       4.64       4.97       4.46       4.39
|     4.69
         13 |     6.63       6.93       7.17       7.55       6.79       7.36
|     7.08
         14 |    10.49      10.82      10.15       9.77      10.77       9.21
|    10.28
         15 |    15.62      14.20      14.46      13.89      11.91      13.48
|    13.82
         16 |    17.41      18.55      17.90      17.82      16.69      14.90
|    17.42
         17 |    18.79      17.91      20.07      18.12      16.95      15.71
|    18.05
         18 |     7.55       7.97       7.85       8.56       7.52       6.31
|     7.75
         19 |     0.69       0.67       0.71       0.70       0.45       0.80
|     0.66
         20 |     0.00       0.06       0.00       0.03       0.00       0.00
|     0.02
-----------+---------------------------------------------------------------
-+----------
      Total |   100.00     100.00     100.00     100.00     100.00     100.00
|   100.00

.
. save tmp1, replace
file tmp1.dta saved

. log close
      name:  <unnamed>
```

```
       log:
D:\clients_2018\WVa_brownandpeisch\programsdata\afcarssummary20201112.log
  log type:  text
 closed on:  12 Nov 2020, 11:44:41
```

APPENDIX III: Alan J. Salzberg Resume and Testimony History

EXPERIENCE

Salt Hill Statistical Consulting, Founder and Principal, 2000-present
Founder and Principal of a statistical consulting company (formerly Quantitative Analysis). The firm is skilled at presenting complex ideas to non-experts, including providing expert testimony in court settings. Capabilities include development and implementation of statistical techniques as well as critical review and audit of existing statistical estimates, samples, and models. The company's clients are law firms, government, and private corporations and have included: United States Department of Labor; Pfizer; Barnes & Thornburg; Honeywell; K&L Gates; City of New York.

Summit Consulting, Teaming Partner, 2009-present
Consult on multiple engagements with economic consulting firm on large-scale government projects. Served as a Director at the firm in 2014.

Analysis & Inference, Inc., CEO, 1991-1995 and 2008-2013
Led a statistical consulting company that provides consulting services to corporations, law firms, and government.

KPMG LLP, Practice Leader, Quantitative Analysis Group – New York, 1996-2000
Established and led the New York office of KPMG's Quantitative Analysis Group.
Morgan Stanley, Associate, 1988-1990, 1995-1996
Performed statistical modeling and software design.

EDUCATION

Ph.D., Statistics, Wharton School, University of Pennsylvania, 1995
M.A., Statistics, Wharton School, University of Pennsylvania, 1992
B.S., Economics (concentration in Economics and Finance), *cum laude,* Wharton School, University of Pennsylvania, 1988

ENGAGEMENTS

- Served as a statistical consultant on behalf of the United States government and other entities in the development of dynamic models for residential property valuation in order to determine whether certain residential mortgage-backed securities (RMBS) were fairly valued. Made use of statistical and econometric techniques including regression modeling, statistical sampling, bootstrapping, and bias adjustment.

- Using social security and insurance company data, developed two probability-based models in order to match unclaimed assets with the individual owners of those assets. The models were successfully implemented at our client, a financial services company, and used to assist state agencies in locating unclaimed assets.

- Served as a statistical expert on behalf of a nuclear power plant owner in a construction delay dispute. Analyzed a statistical sample and model from a population of more than 100,000 comments on design documents. Authored three expert reports and testified before the International Chamber of Commerce's arbitration court in London.

- Served as a statistical sampling expert on behalf of an arbitration panel in a dispute regarding payments on several thousand healthcare claims. Analyzed data from samples of those claims and made recommendations to the arbitration panel regarding proper interpretation and extrapolation of the sample.

- On behalf of the New York State Office of Medicaid Inspector General, reviewed the sampling and estimation methodology used to audit Medicaid providers in New York State. Reviewed and critiqued specific methodologies in ongoing matters, and provided recommendations for improving the statistical audit process.

- On behalf of a Fortune 100 company, evaluated models that estimated the potential liability in more than 10,000 asbestos settlements. In addition, reviewed the likely bias and other issues with a model that predicted the "propensity to sue" for future claims. Wrote two expert reports concerning findings and testified as a statistical expert regarding those findings.

- In a series of matters on behalf of the law department for a major city, created and analyzed a massive real estate database, modeled market and sales values, and wrote expert reports to determine potential biases of alternative methods of valuing commercial real estate. Determined the validity of assumptions about lease lengths, turnover rates, and other issues affecting rents and property values. Testified as a statistical expert in one of these matters.

- On behalf of the United States Department of Labor, acted as the principal investigator on a study of industry compliance with certain labor laws. Developed and pulled a statistical sample for evaluation. Performed survival analysis to better understand how long certain industry investigations would last and the likely outcomes of such investigations.

- For major pharmaceutical company, analyzed company and external marketing data to determine reliability and potential biases in using external data sources. Analyzed physician-specific data for a period of 36 months concerning product marketing to approximately 1 million prescription drug subscribers.

- In complex litigation matter involving an undersea oil field, analyzed data from several years of inspections and repairs to determine likelihood of a catastrophic failure that would result in a major oil spill. Used survival analysis to determine the likelihood of such an event for different inspection and repair cycles.

- On behalf of several state public service commissions, directed data analysis and statistical design in a series of tests of Bell South, Verizon, SBC-Ameritech, and Qwest. Beginning in 1998, developed software and procedures for calculating performance metrics and evaluating the competitive environment. Testified before several state public service commissions, including New York, Virginia, Florida, Michigan, and Colorado.

- Modeled television audience ratings to determine the Public Broadcasting System's share of cable royalty distributions. Used statistical methods to determine a reliable estimate of PBS's cable royalty share. The estimate resulted in a multi-million dollar decision in favor of the Public Broadcasting System by the Cable Royalty Tribunal.

- Lead statistician in the design and implementation of a sample of all personal property and equipment on behalf of the United States Internal Revenue Service. The population of interest involved more than one million items contained in over 1,000 buildings. The sample design, implementation, and resulting estimates and projections were subject to intense scrutiny by the United States General Accounting Office.

- For the United States Department of Justice, designed and implemented a sample to estimate the number of immigrants improperly granted citizenship. The sample was designed to provide precision of plus or minus less than 1%, for a population of more than 1 million immigrants. The work was the focus of intense congressional scrutiny and received substantial review in the media.

- On behalf of Fortune 100 company, created statistical models to determine the probabilities and likely severities of accidents for different employee and accident types. This project resulted in recommended annual savings of $3 million.

- On behalf of the Arava Institute of Environmental Studies, advised on design and sampling methodology for a broad-based survey of environmental education in middle and high schools. More than 7,000 students were surveyed in a sample that was stratified by size of town, income level, and other socio-economic variables. Performed weighted statistical analysis to project survey results to the population. Presented results before Israeli Congressional committee in July 2007.

- For the United States Customs Service (Department of Homeland Security), assisted with sampling of financial statement information. Designed and wrote sampling plans, helped implement the plans, and created spreadsheet calculator to analyze results. In an earlier engagement, evaluated the credibility of statistical sampling and analysis used to track and categorize imports, for the Office of Inspector General. Suggested improved methods of sampling and implementation.

- Provided expert testimony in statistics more than two dozen trials, hearings, and depositions over the last 20 years, including multiple times in United States Federal Court.

RESEARCH

"From Fingerprints to Opioids: How Data Science Can Support Law and Public Policy," with Corey West, *Kansas Journal of Law and Public Policy*, Summer 2020.

"Resolving a Multi-Million Dollar Contract Dispute with a Latin Square," *American Statistician*, with William B. Fairley, Steven M. Crunk, Peter J. Kempthorne, Julie Novak, and Bee Leng Lee, 2017.

 "What are the Chances?" blog, 2007 to present. Excerpts have been included in newspapers and textbooks, including Lundsford, Andrea L. and Ruszkiewicz, John, *Everything's an Argument, 6th Edition,* 2012. The blog is publicly available at https://salthillstatistics.com/blog.

"Law and Statistics of Combining Categories: Wal-Mart and Employment Discrimination Cases", with Albert J. Lee, *Proceedings of the 2010 Joint Statistical Meetings of the American Statistical Association*, 2010.

"Evaluating the Environmental Literacy of Israeli Elementary and High School Students," with Maya Negev, Gonen Sagy, and Alon Tal, *Journal of Environmental Education,* Winter 2008.

"Trends in Environmental Education in Israel," with Gonen Sagy, Maya Negev, Yaakov Garb, and Alon Tal, *Studies in Natural Resources and Environment,* Vol. 6, 2008. [In Hebrew]

"Results from a Representative Sample in the Israeli Educational System," with Gonen Sagy, Maya Negev, Yaakov Garb, and Alon Tal, *Studies in Natural Resources and Environment,* Vol. 6, 2008. [In Hebrew]

"Comment on Local model uncertainty and incomplete-data bias by Copas and Li," with Paul R. Rosenbaum, *Journal of the Royal Statistical Society, Series B*, 2005.

"Determining Air Exchange Rates in Schools Using Carbon Dioxide Monitoring", with D. Salzberg and C. Fiegley, presented at the *American Industrial Hygiene Conference and Expo*, 2004.

"The Modified Z versus the Permutation Test in Third Party Telecommunications Testing", *Proceedings of the 2001 Joint Statistical Meetings of the American Statistical Association.*

"Removable Selection Bias in Quasi-experiments," *The American Statistician,* May 1999.

"Skewed oligomers and origins of replication," with S. Salzberg, A. Kervalage, and J. Tomb, *Gene,* Volume 217, Issue 1-2 (1998), pp. 57-67.

"Selection Bias in Quasi-experiments," (Doctoral Thesis), 1995.

Editorial Contributor (referee for scholarly papers)**,** *American Statistician*.

Patent (#6,636,585) One of five inventors on a patent for statistical process design related to information systems testing.

BILLING RATE

My billing rate for this project is $595 per hour. My compensation in no way depends on the results of my analyses.

FOUR YEAR TESTIMONY HISTORY

1. [Deposition] *State of New York v. U.S. Immigrations and Customs Enforcement and John Doe v. U.S. Immigration and Customs Enforcement,* 2020.

2. [Federal court] *Bayer Healthcare LLC, v. Baxalta, et al,* 2019.

3. [Depositions] *Center for Independence of the Disabled, et al, v. Metropolitan Transit Authority, et al,* 2018 and 2019.

4. [Federal court] *Steward, et al, v. State of Texas,* 2018.

5. [Deposition] *Bayer Healthcare, LLC, v. Baxalta Inc., et al,* 2018.

6. [Deposition] *New Image Global, Inc. v. U.S.,* 2017.

7. [Federal court] *Steward, et al, v. State of Texas,* 2017.

8. [Deposition] *Home Equity Mortgage Trust, et al, v. DLJ Mortgage Capital, et al,* 2017.

9. [Deposition] *Jackson and Byrne v. Callahan Publishing, et al,* 2016.

10. [International arbitration] *Areva NP GmbH, Areva NP S.A.S. and Siemens Aktiengesellschaft v. Teollisuuden Voima Oyj*, 2016.

11. [California court] *Regents of the University of California v. County of Sacramento No. 34-2009-80000383, Superior Court of California, Sacramento County)*, 2016.